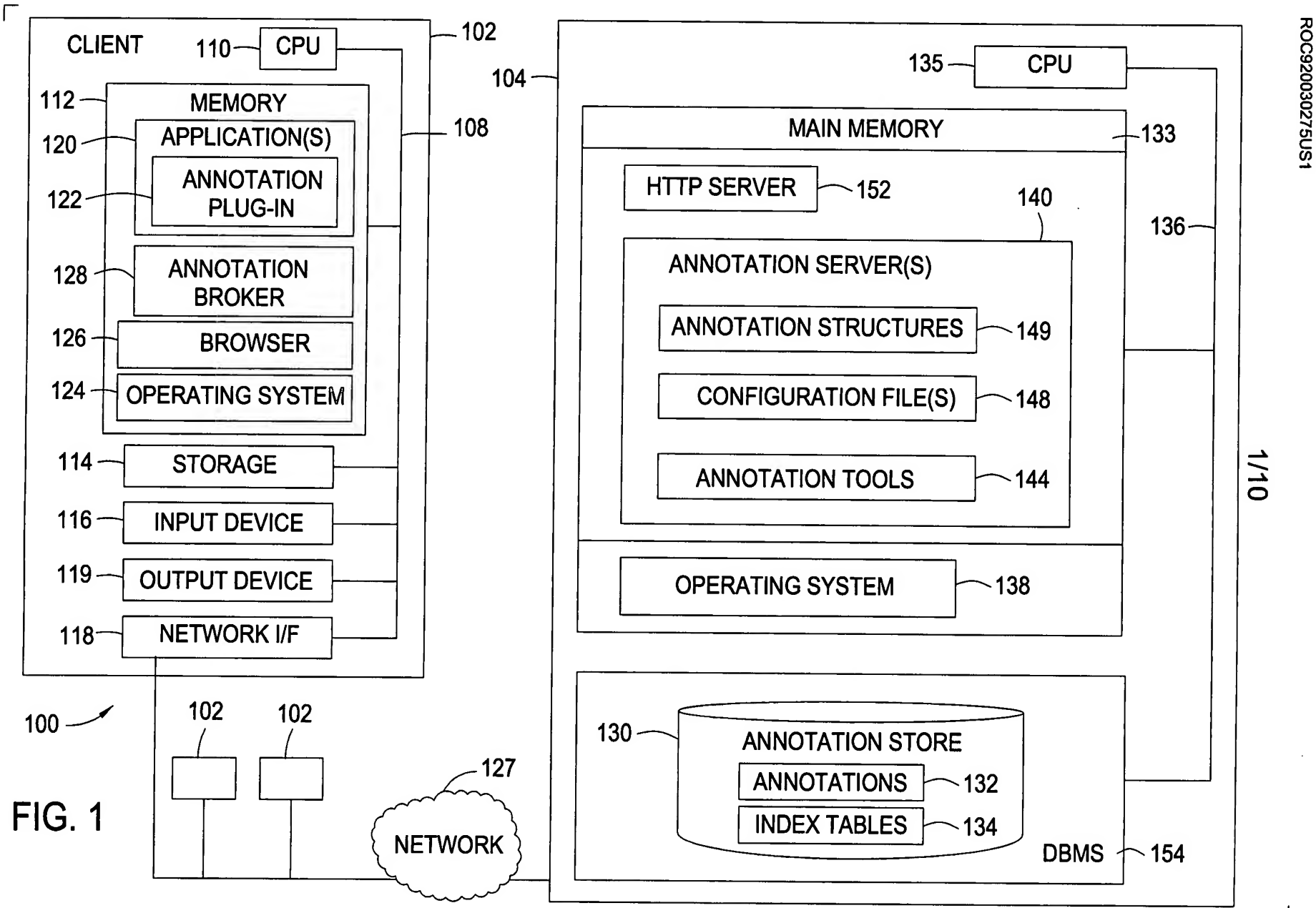
CLIENT
110
CPU
102
112
MEMORY
120
APPLICATION(S)
122
ANNOTATION PLUG-IN
108
128
ANNOTATION BROKER
126
BROWSER
124
OPERATING SYSTEM
114
STORAGE
116
INPUT DEVICE
119
OUTPUT DEVICE
118
NETWORK I/F
100
102
102
127
NETWORK
104
135
CPU
MAIN MEMORY
133
HTTP SERVER
152
140
136
ANNOTATION SERVER(S)
ANNOTATION STRUCTURES
149
CONFIGURATION FILE(S)
148
ANNOTATION TOOLS
144
OPERATING SYSTEM
138
130
ANNOTATION STORE
ANNOTATIONS
132
INDEX TABLES
134
DBMS
154

FIG. 1

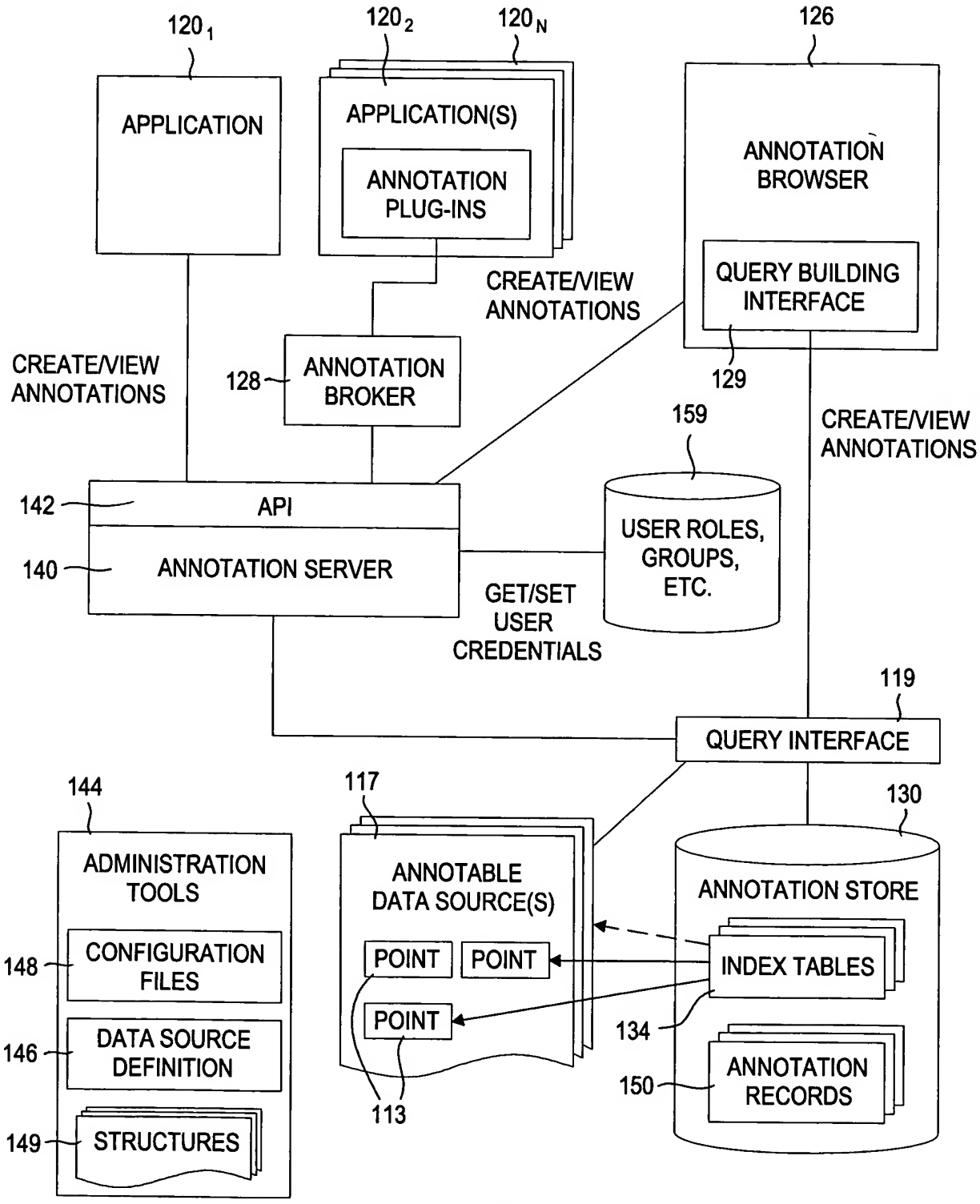
120 1
120 2
120 N
126
APPLICATION
APPLICATION(S)
ANNOTATION PLUG-INS
ANNOTATION BROWSER
QUERY BUILDING INTERFACE
CREATE/VIEW ANNOTATIONS
CREATE/VIEW ANNOTATIONS
128
ANNOTATION BROKER
129
159
CREATE/VIEW ANNOTATIONS
142
API
140
ANNOTATION SERVER
USER ROLES, GROUPS, ETC.
GET/SET USER CREDENTIALS
119
QUERY INTERFACE
144
117
130
ADMINISTRATION TOOLS
ANNOTABLE DATA SOURCE(S)
ANNOTATION STORE
148
CONFIGURATION FILES
POINT
POINT
INDEX TABLES
146
DATA SOURCE DEFINITION
POINT
134
149
STRUCTURES
113
150
ANNOTATION RECORDS

FIG. 2

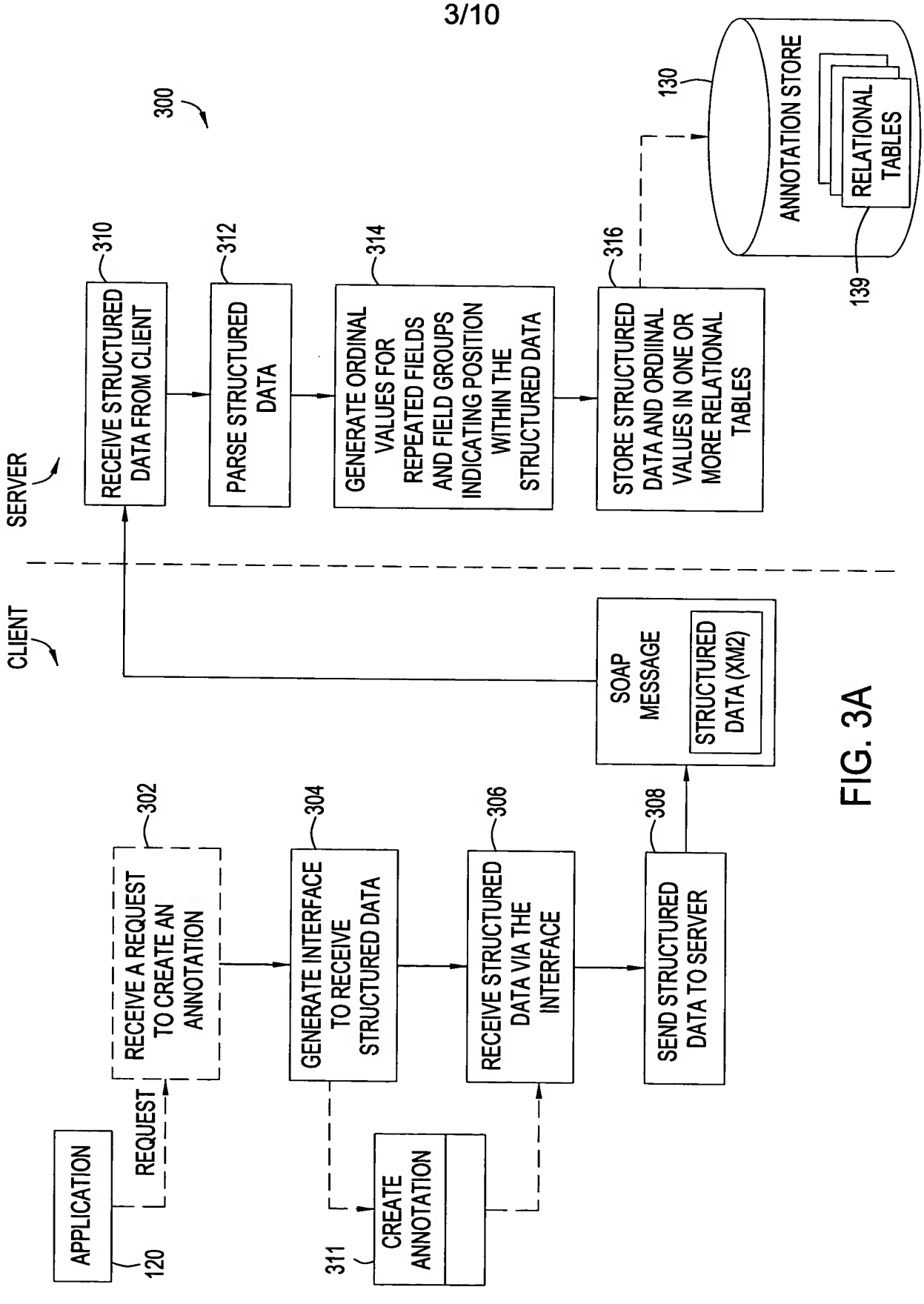
300
SERVER
CLIENT
APPLICATION
120
REQUEST
RECEIVE A REQUEST TO CREATE AN ANNOTATION
302
GENERATE INTERFACE TO RECEIVE STRUCTURED DATA
304
311
CREATE ANNOTATION
RECEIVE STRUCTURED DATA VIA THE INTERFACE
306
SEND STRUCTURED DATA TO SERVER
308
SOAP MESSAGE
STRUCTURED DATA (XM2)
RECEIVE STRUCTURED DATA FROM CLIENT
310
PARSE STRUCTURED DATA
312
GENERATE ORDINAL VALUES FOR REPEATED FIELDS AND FIELD GROUPS INDICATING POSITION WITHIN THE STRUCTURED DATA
314
STORE STRUCTURED DATA AND ORDIINAL VALUES IN ONE OR MORE RELATIONAL TABLES
316
130
ANNOTATION STORE
RELATIONAL TABLES
139

FIG. 3A

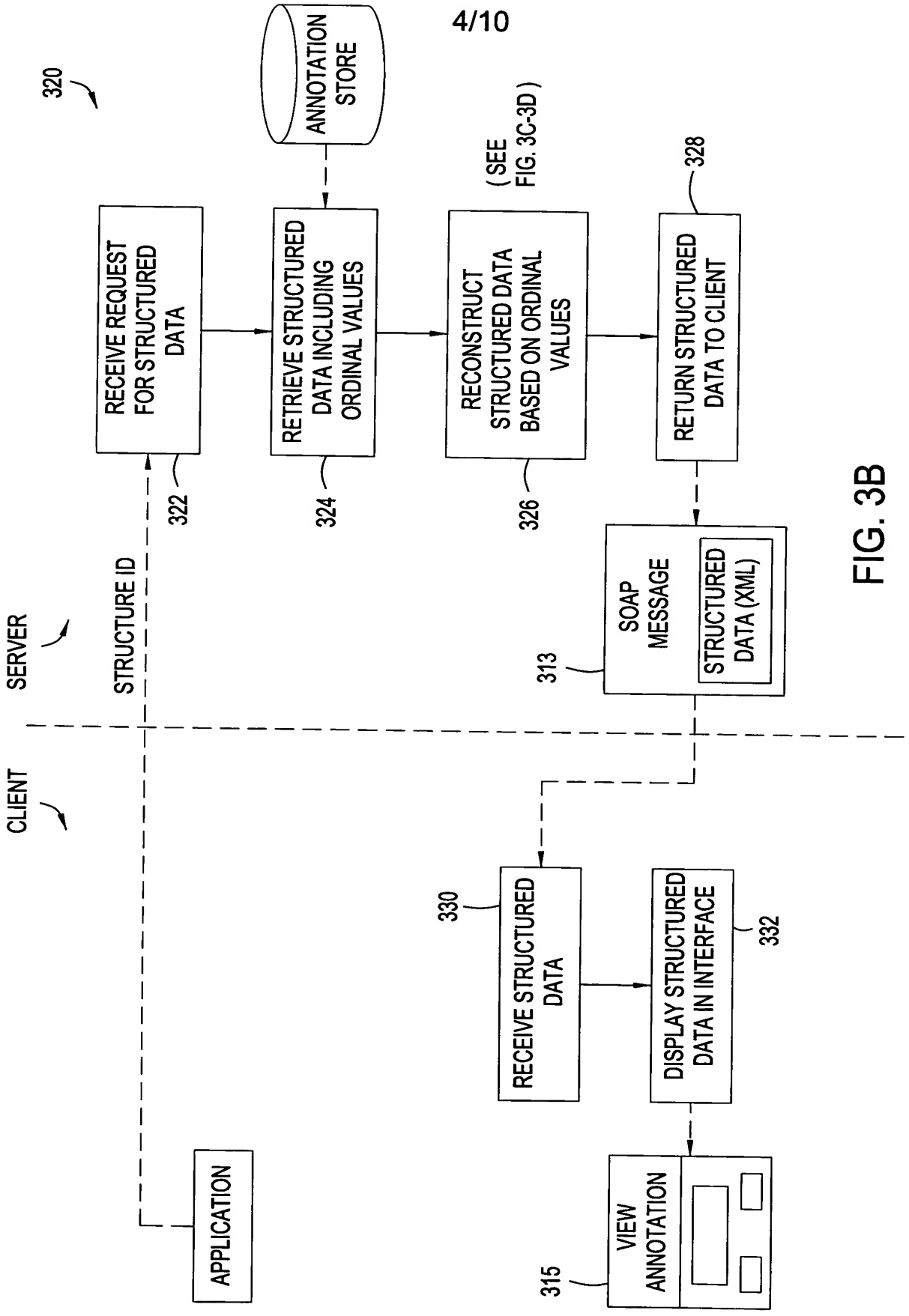
320
ANNOTATION STORE
RECEIVE REQUEST FOR STRUCTURED DATA
RETRIEVE STRUCTURED DATA INCLUDING ORDINAL VALUES
RECONSTRUCT STRUCTURED DATA BASED ON ORDINAL VALUES
(SEE FIG. 3C-3D)
RETURN STRUCTURED DATA TO CLIENT
328
322
324
326
SERVER
STRUCTURE ID
SOAP MESSAGE
STRUCTURED DATA (XML)
313
CLIENT
330
RECEIVE STRUCTURED DATA
DISPLAY STRUCTURED DATA IN INTERFACE
332
APPLICATION
VIEW ANNOTATION
315

FIG. 3B

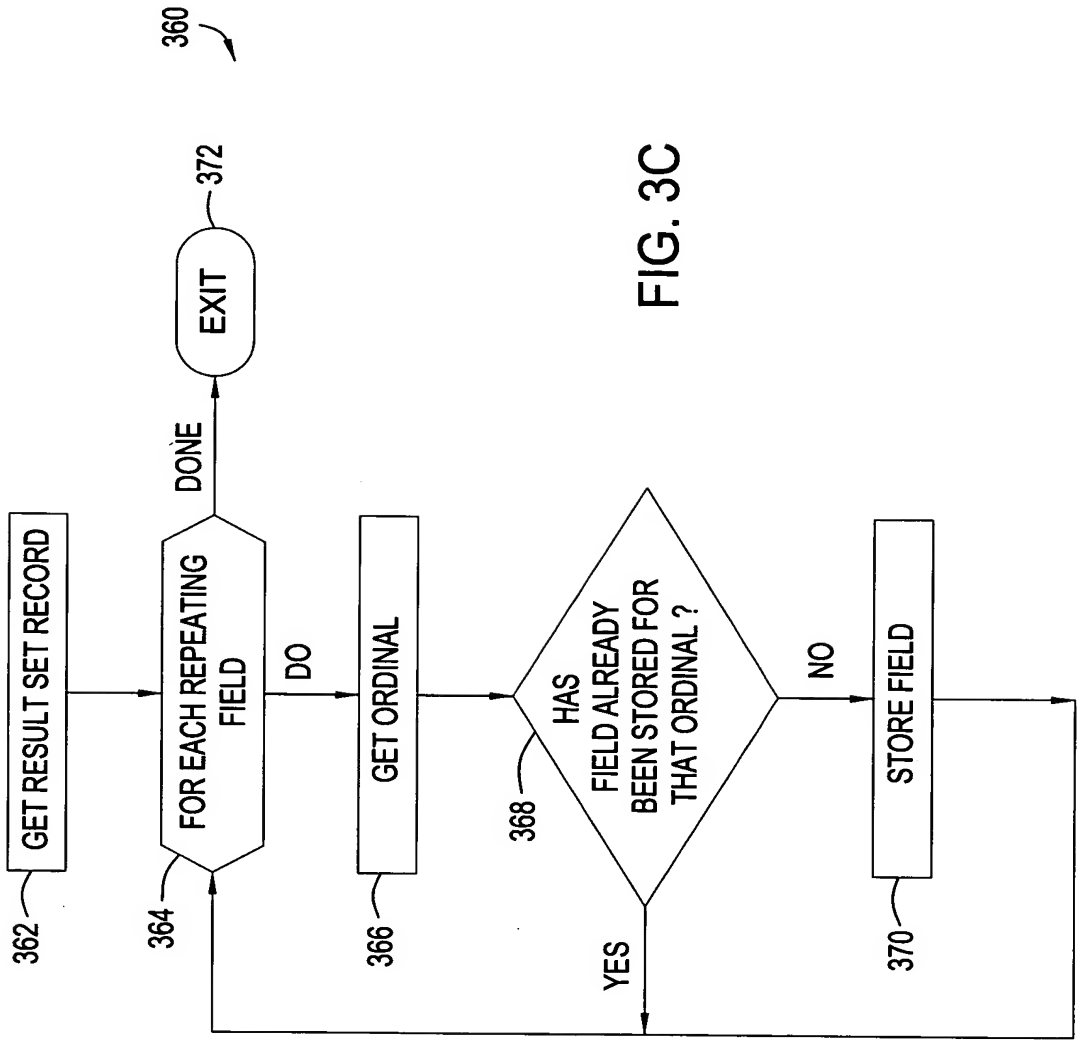
360
372
EXIT
DONE
GET RESULT SET RECORD
FOR EACH REPEATING FIELD
DO
GET ORDINAL
HAS FIELD ALREADY BEEN STORED FOR THAT ORDINAL ?
NO
STORE FIELD
YES
362
364
366
368
370

FIG. 3C

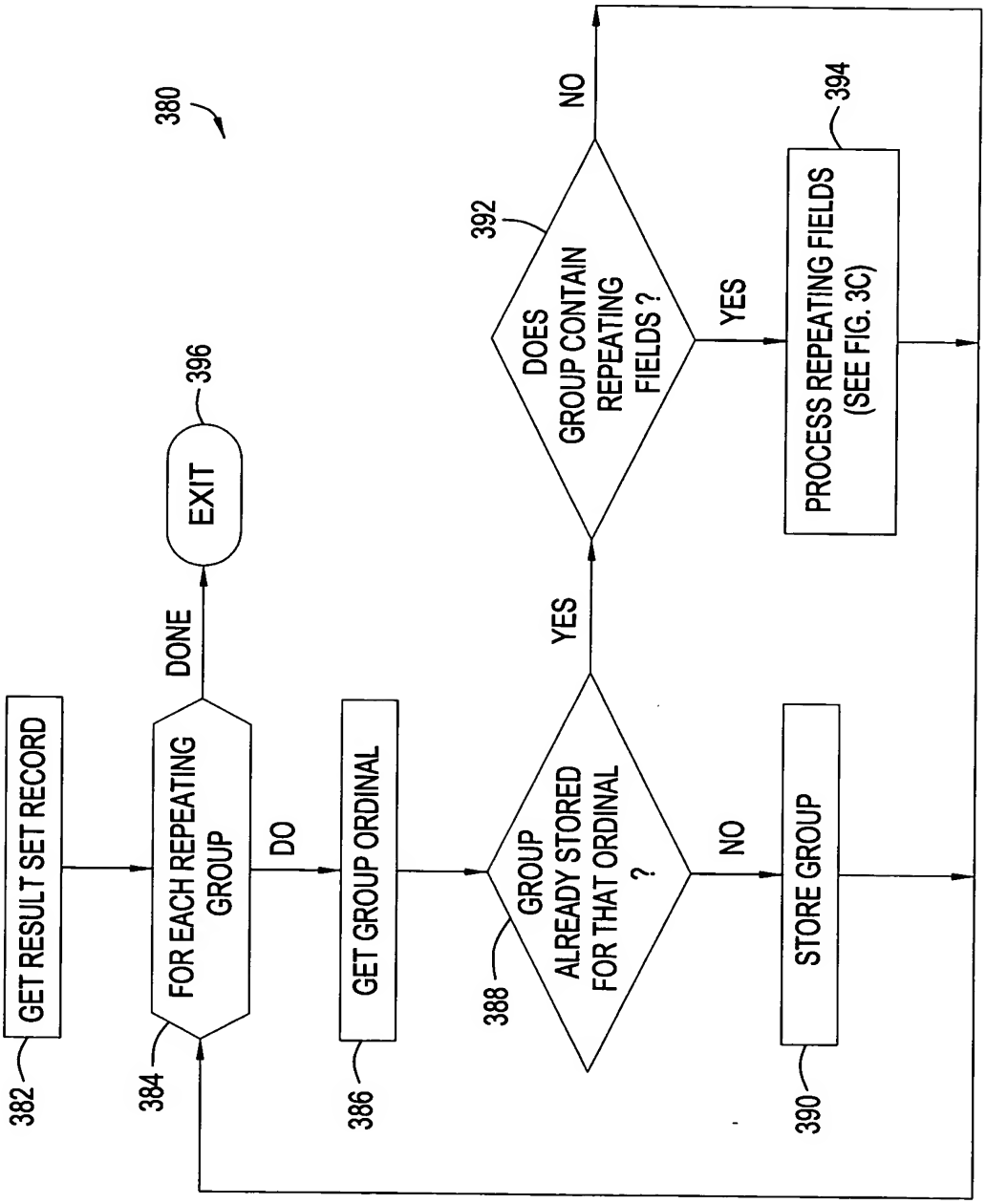
380
GET RESULT SET RECORD
382
FOR EACH REPEATING GROUP
384
DONE
EXIT
396
DO
GET GROUP ORDINAL
386
GROUP ALREADY STORED FOR THAT ORDINAL ?
388
YES
NO
STORE GROUP
390
DOES GROUP CONTAIN REPEATING FIELDS ?
392
NO
YES
PROCESS REPEATING FIELDS (SEE FIG. 3C)
394

FIG. 3D

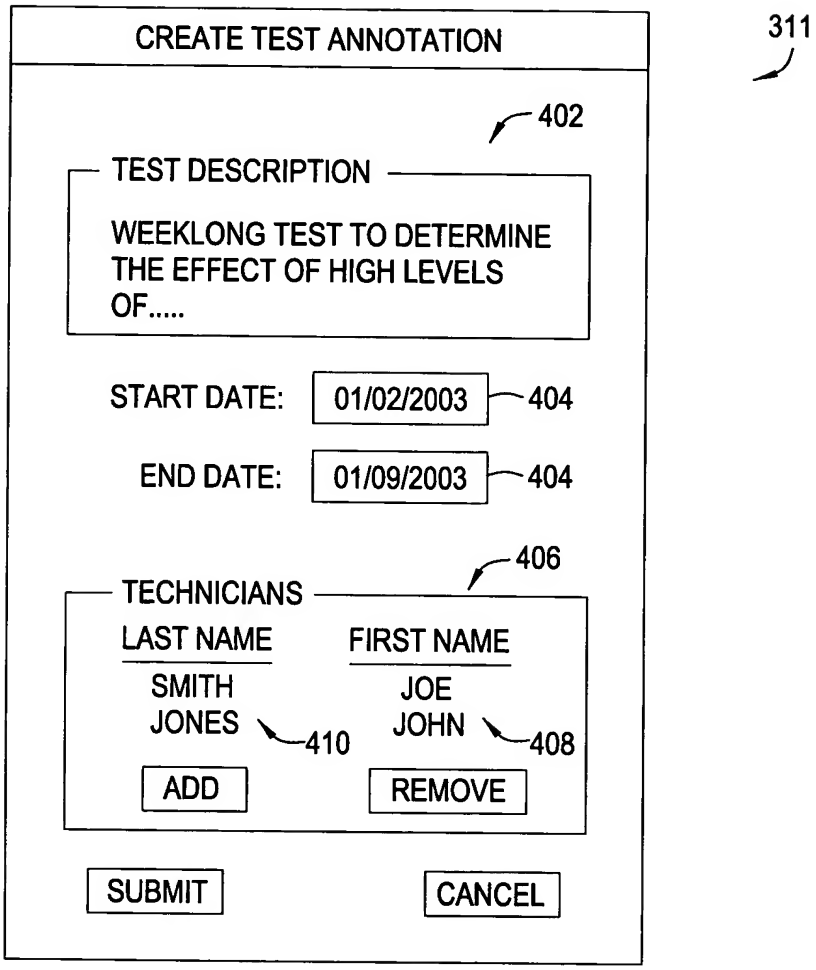
CREATE TEST ANNOTATION
311
402
TEST DESCRIPTION
WEEKLONG TEST TO DETERMINE THE EFFECT OF HIGH LEVELS OF.....
START DATE:
01/02/2003
404
END DATE:
01/09/2003
404
406
TECHNICIANS
LAST NAME
FIRST NAME
SMITH
JOE
JONES
JOHN
410
408
ADD
REMOVE
SUBMIT
CANCEL

FIG. 4

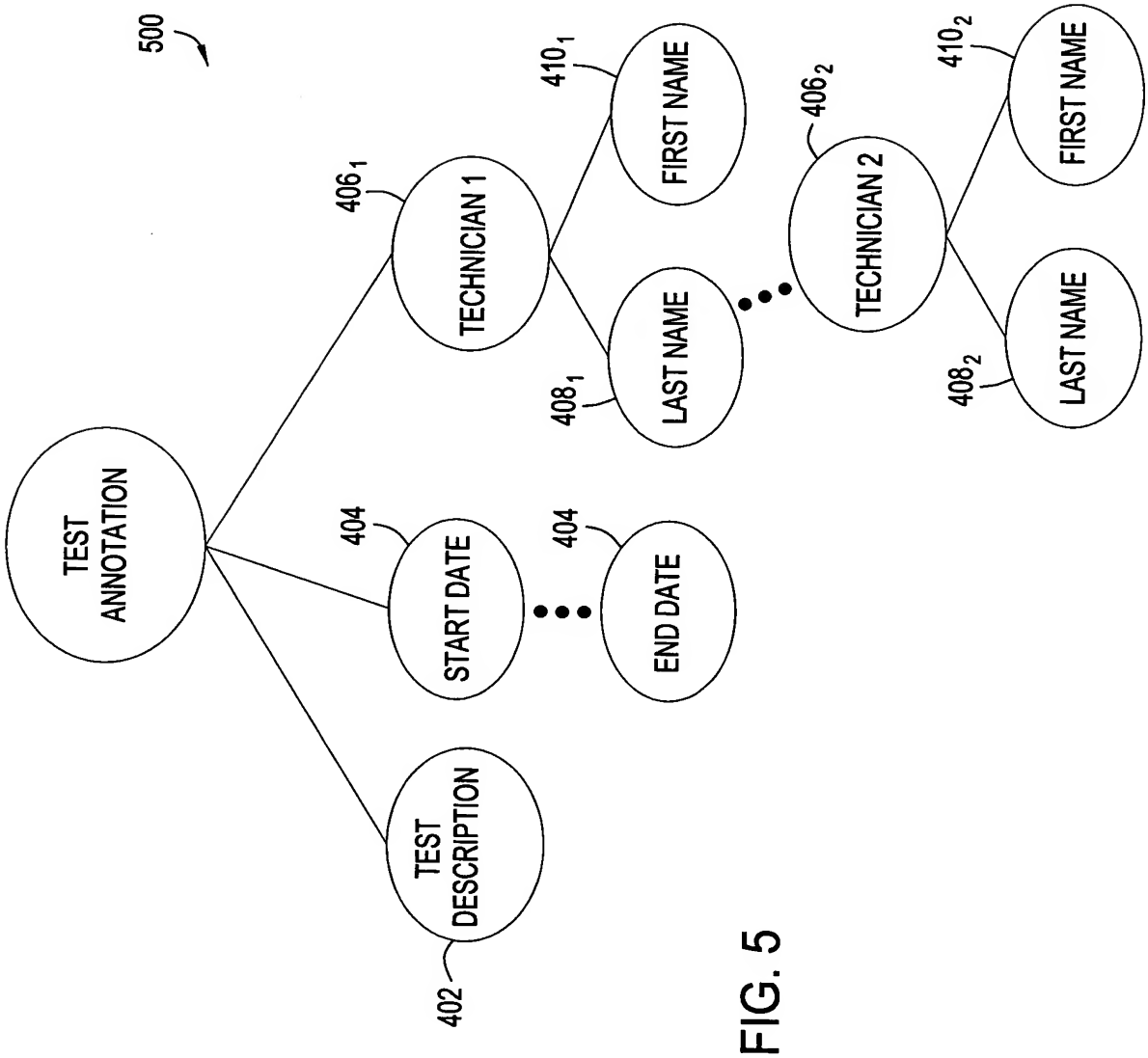
500
TEST ANNOTATION
TEST DESCRIPTION
402
START DATE
404
END DATE
404
TECHNICIAN 1
406 1
TECHNICIAN 2
406 2
FIRST NAME
410 1
LAST NAME
408 1
FIRST NAME
410 2
LAST NAME
408 2

FIG. 5

600

REPEATING FIELD TABLE		
KEY	FIELD DATA	ORDINAL
- - -	- - -	- - -
XYZ	01/02/2003	1
XYZ	01/09/2004	2
- - -	- - -	- - -

602 604 606

FIG. 6A

610

REPEATING GROUP TABLE			
KEY	GROUP FIELD 1	DATA FIELD 2	ORDINAL
- - -	- - -	- - -	- - -
ABC	SMITH	JOE	1
ABC	JONES	JOHN	2
- - -	- - -	- - -	- - -

612 614 616

FIG. 6B

620

606 616

FIELD $_{2B}$ GROUP$_3$

FIELD $_{1A}$ FIELD $_{1B}$ FIELD $_{1C}$ | FIELD $_{2A}$ FIELD $_{2B}$ ORDINAL | ORDINAL FIELD $_{3A}$ FIELD $_{3B}$

GROUP 1 GROUP 2 GROUP 3

FIG. 6C

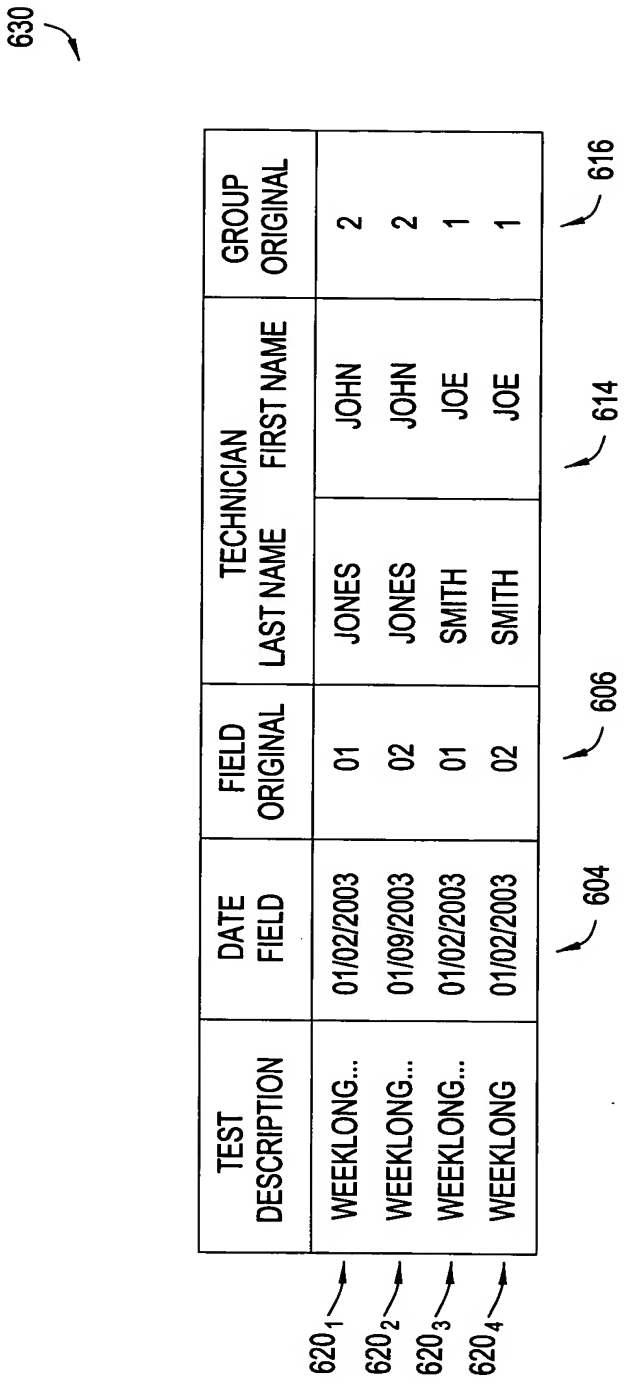
630
TEST DESCRIPTION
DATE FIELD
FIELD ORIGINAL
TECHNICIAN LAST NAME
TECHNICIAN FIRST NAME
GROUP ORIGINAL
WEEKLONG...
01/02/2003
01
JONES
JOHN
2
WEEKLONG...
01/09/2003
02
JONES
JOHN
2
WEEKLONG...
01/02/2003
01
SMITH
JOE
1
WEEKLONG
01/02/2003
02
SMITH
JOE
1
620 1
620 2
620 3
620 4
604
606
614
616

FIG. 6D